

## CLAIMS

1. An organicelectroluminescent element containing a  $\pi$  conjugated organic polymer compound, comprising a functional layer which is  
5 formed by causing gas molecules of at least one type of compound selected from the group consisting of dyes and charge transport materials to contact and penetrate the  $\pi$  conjugated organic polymer compound.
- 10 2. An organicelectroluminescent element containing a  $\pi$  conjugated organic polymer compound, comprising a light-emitting layer which is formed by causing gas molecules of at least one type of compound selected from the group consisting of dyes and charge transport materials to contact and penetrate the  $\pi$  conjugated organic polymer  
15 compound.
3. An organicelectroluminescent element containing a  $\pi$  conjugated organic polymer compound, comprising a charge transport layer which is formed by causing gas molecules of at least one type of compound  
20 selected from the group consisting of dyes and charge transport materials to contact and penetrate the  $\pi$  conjugated organic polymer compound.
4. An organicelectroluminescent element containing a  $\pi$  conjugated  
25 organic polymer compound, comprising a light-emitting layer and a charge transport layer which are formed by causing gas molecules of at least one type of compound selected from the group consisting of dyes and charge transport materials to contact and penetrate

the  $\pi$  conjugated organic polymer compound.

5 5. A method for manufacturing an organic electroluminescent element, comprising causing gas molecules of at least one type of compound selected from the group consisting of dyes and charge transport materials to contact and penetrate at least a  $\pi$  conjugated organic polymer compound.

10 6. The organic electroluminescent element according to any of claims 1 to 3, wherein the  $\pi$  conjugated organic polymer compound has a chemical structure represented by a general formula  $-(Ar)_n-$  and/or  $-(ArA)_n-$ , where Ar represents a benzene ring, a thiophene ring, a pyridine ring, a pyrrole ring or an oxadiazole ring and A represents a double bond, a triple bond or an NH bond.

15 7. The organic electroluminescent element according to any of claims 1 to 3, wherein the  $\pi$  conjugated organic polymer compound is at least one type selected from the group consisting of poly(p-phenylenevinylene), polythiophene, polythiophenevinylene, 20 poly(p-phenylene) and poly(p-phenylacetylene).

8. The organic electroluminescent element according to any of claims 1 to 3, wherein the dye is a fluorescent dye.

25 9. The organic electroluminescent element according to claim 8, wherein the fluorescent dye is at least one type of dye selected from the group consisting of a coumarin type dye, a quinacridone type dye, a dicyanomethylene type dye, a dicyanoazepine, a

benzothiazole type dye, a perylene type dye, an acetonitrile-triphenylamine type dye, an Eu atom-containing complex type dye and an azabenzanthracene-pyran type dye.

5 10. The organic electroluminescent element according to any of claims 1 to 3, wherein the charge transport compound is at least one type of compound selected from the group consisting of a hole transport material which transports a positive (+) charge, an electron transport material which transports a negative (-) charge,  
10 and an electron transport compound having a light emission ability.

11. The organic electroluminescent element according to claim 10, wherein the hole transport material is at least one type of hole transport material selected from the group consisting of low  
15 molecular compounds having a carbazole ring, a thiophene ring, triphenylamine, triphenylmethane or distilbene structure, and compounds having the low molecular compounds bonded by a diazo or triazo group.

20 12. The organic electroluminescent element according to claim 10, wherein the electron transport material is at least one type of electron transport material selected from the group consisting of compounds having an oxadiazole ring, a triazole ring, a quinone ring, an imidazole ring, a flavone ring, a thiazole ring, a  
25 benzimidazole ring, a quinoline ring, a quinoxaline ring or a pyrazine ring, and compounds having a nitro group or a cyano group introduced into the former compounds.

13. The organic electroluminescent element according to claim 10,  
wherein the electron transport compound having a light emission  
ability is at least one type selected from the group consisting  
of aluminum, zinc, beryllium, europium and erbium complexes having  
5 a benzooxadiazole ring, a quinolyl ring, a benzoquinolyl ring, a  
benzothiazole ring or a hydroxyflavone ring in a ligand.